

**CURRICULUM VITAE** *Name:* Federico Quaini

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*Date and place of birth:* 07/04/1948, Cremona, ITALY

*Education*

High School: Liceo Classico 1966

M.D.: University of Parma 1974

Board in Hematology, University of Modena 1977

*Current Italian Appointment* Associate Professor of Oncology, University of Parma  
Director of the Cardiac Stem Cell Center CISTAC,  
University of Parma  
Expert Manager on Regenerative Medicine, University  
Hospital Parma  
Coordinator School of Specialization in Oncology

*Previous Appointments* 1979-1985: Assistant Professor of Medicine, University of Parma,

December 1981 and January - July 1984: Research Assistant Professor, Department of Anatomy, New York Medical College

1984: Adjunct Assistant Professor of Histology, City College University of the NYU

1985-1996: Associate Professor of Medicine, University of Parma

1987: Research Assistant Professor, Department of Anatomy, NY Medical College,

1994, 1997, 2001-2007: Visiting Professor, Cardiovascular Research Institute,  
Department of Medicine, NY Medical College

Associate Professor of Oncology, University of Parma 1996-

*Teaching positions:* Head of the Course in Hematology-Oncology, Faculty of Medicine-University of Parma; Course in Regenerative Medicine, Faculty of Biotechnology-University of Parma: Coordinator of the Board in Oncology-University of Parma

*Ongoing collaborative work:* 1) P. Anversa, on the identification of human lung stem cells; 2) D.T. Scadden, Center for Regenerative Medicine, Massachusetts General Hospital, Boston, USA on bone marrow stem cell niches; 3) P. Mameddu, Experimental Cardiovascular Medicine, Bristol University, UK on diabetes as a stem cell disease

*Referee:* PRIN e FIRB scientific projects from Italian Ministry of University (MIUR)

Heart Research UK and Georgian National Science Foundation

*Editorial Board* PloSOne

*Reviewer for:* PloSOne, Biochemical Pharmacology, Stem Cell Translational Medicine

*Recent Supported Research:*

Co-Principal Investigator of the NIH Grant entitled: Cardiac Stem Cells and the Infarcted aging heart, 2004-2009 (Principal Investigator: Piero Anversa);

-Principal Investigator of PRIN MIUR project 2007AL2YNC entitled: Cardiotoxicity of anti-cancer therapy involves resident cardiac stem-progenitor cells. 2007-2009.

-Co-Principal investigator of the European Project N° 214539 FP7-NMP-2007:

BIOSCENT BIOactive highly porous and injectable Scaffolds controlling stem cell recruitment, proliferation and differentiation and enabling angiogenesis for Cardiovascular ENgineered Tissues, 2008-2013

-Co-Principal Investigator of Regional Project on Regenerative Medicine, 2008-2012

**Membership**

European Society of Cardiology  
Council Basic Cardiovascular Science  
American Heart Association  
Italian Society of Cardiovascular Research

**Statement of Interest:** Translational Research in Regenerative Medicine, Identification of the role of adult somatic stem cells in several pathologic states including cardiovascular and lung diseases.

**Scientific Publications**

1. Delsignore R, Baroni MC, Rizzoli V, Quaini F, Mangoni L, Butturini U. The problem of infections in acute leukemias: origin, therapy and prevention by protective isolation Ateneo Parmense Acta Biomed 48:381-403, 1977
2. Rizzoli V, Sansoni P, Mangoni L, Quaini F, Pigoli G, Delsignore R, Baroni MC, Butturini U Erythropoietic stimulating activity of the liver in the neonatal life of the rat. Haematologica 63: 375-84, 1978
3. Delsignore R, Quaini F, Rizzoli V, Baroni MC, Zavaroni G, Butturini U Sézary syndrome with terminal evolution in acute myeloblastic leukemia G Clin Med 60:560-8, 1979
4. Orlic D, Quaini F, Konski AA, Wu JM 2'5' -Adenylate inhibition of erythropoietin-dependent colony formation Stem Cells 1: 261-272, 1981
5. Orlic D, Wu JM, Carmichael, Quaini F, Kobylack M, Gordon AS Increased erythropoiesis and 2'5' - A polymerase activity in the marrow and spleen of phenylhydrazine-injected rats Exp Hemat 10: 478-490, 1982
6. Orlic D, Kirk E, Quaini F Increased 2,5 -Adenylate synthetase activity in the spleens of balb/c mice during hypoxia-stimulated erythropoiesis Exp Hematol 13: 821-828, 1985
7. Borelli TJ, Konno S, Vuolo LL, Quaini F, Wu JM Induction of human HL-60 leukemic cell differentiation by immune interferon is accompanied by an increase in NADase activity and by a decrease in DNA-binding proteins Biochemistry International 11: 61-68, 1985
8. Orlic D, Kirk E, Quaini F, Babbott S The 2'5' Adenylate (2-5 A) system in erythropoiesis Blood Cells 10: 193-201, 1985
9. Silvestrini G, Ferraccioli GF, Quaini F, Palummeri E, Bonucci E Adult osteopetrosis: study of two brothers Appl Pathol 5: 184-192, 1987
10. Rigon G, Baratti M, Quaini F, Calzetti S Polycythemic chorea. Description of a clinical case Minerva Med 78:1325-9, 1987
11. Passeri M, Palummeri E, Baroni MC, Quaini F, Quintavalla A, Barbagallo M, Franchini D, Ugolotti D Isotope retention for assessment of bone turnover in involutional osteoporosis Clin Rheumatol Suppl 2:35-40, 1989
12. Orlic D, Gill R, Feldschuh R, Quaini F, Malice A, Sandoval C Molecular mechanism for the inhibitory action of interferon on hematopoiesis Ann NY Acad Sci 554: 36-49, 1989

13. Olivetti G, Lagrasta C, Quaini F, Ricci R, Moccia G, Capasso JM, Anversa P Capillary growth in anemia-induced ventricular wall remodeling in the rat heart Circ Res 65:1182-90, 1989
14. Barbagallo M, Quaini F, Baroni MC, Barbagallo CM, Boiardi L, Passeri G, Arlunno B, Delsignore R, Passeri M Histological evidence of increased turnover in bone from spontaneously hypertensive rats Cardioscience 2:15-7, 1991
15. Gelmini G, Quaini F, Mineo F, Moccia G, Ricci R, Lagrasta C, Delsignore R, Olivetti G Effects of hypochromic microcytic anemia induced by an iron-copper free diet on whole blood filterability and other hemorheological parameters in rats Clinical Hemorheology 11: 605-610, 1991
16. Quaini F, Manganelli P, Pileri S, Magnani G, Ferrari C, Delsignore R, Sabattini E, Olivetti G: Immunohistological characterization of lymph node in two cases of adult onset Still's disease J Rheumatol 18: 9-16, 1991
17. Roncella S, Francia Di Celle P, D'Amore SG, Casoli C, Cutrona G, Muzzolini C, Quaini F, Nicolo G, Foa R, Pistoia V Cellular and molecular characterization of two cases of Castleman's disease, plasma cell variant Leukemia and Lymphoma 5: 391-399, 1991
18. Olivetti G, Quaini F, Lagrasta C, Ricci R, Tiberti GL, Capasso JM, Anversa P Myocyte cellular hypertrophy and hyperplasia contribute to ventricular wall remodeling in anemia-induced myocardial dysfunction in rats Am J Pathol 141:1-8, 1992
19. Manganelli P, Ferraccioli G, Passalacqua R, Quaini F Polymyalgia rheumatica and malignant neoplasms. A report of 3 cases Recenti Prog Med 83:200-2, 1992
20. Olivetti G, Cigola E, Lagrasta C, Ricci R, Quaini F, Monopoli A, Ongini E Spirapril prevents left ventricular hypertrophy, decreases myocardial damage and promotes angiogenesis in spontaneously hypertensive rats J Cardiovasc Pharmacol 21: 362-370, 1993
21. Olivetti G, Quaini F, Lagrasta C, Ricci R, Tosini P, Capasso JM, Anversa P Effects of genetic hypertension and nutritional anaemia on ventricular remodelling and myocardial damage in rats Cardiovasc Res 27: 1316-25, 1993
22. Beltrami CA, Finato N, Rocco M, Feruglio GA, Puricelli C, Cigola E, Quaini F, Sonnenblick EH, Olivetti G, Anversa P Structural basis of end-stage failure in ischemic cardiomyopathy in humans Circulation 89:151-163, 1994
23. Olivetti G, Melissari M, Balbi T, Quaini F, Cigola E, Sonnenblick EH, Anversa P Myocyte cellular hypertrophy is responsible for ventricular remodelling in the hypertrophied heart of middle aged individuals in the absence of cardiac failure Cardiovasc Res 28: 1199-1208, 1994
24. Olivetti G, Melissari M, Balbi T, Quaini F, Sonnenblick EH, Anversa P Myocyte nuclear and possible cellular hyperplasia contribute to ventricular remodeling in the hypertrophic senescent heart in humans J Am Coll Cardiol 24: 140-149, 1994
25. Quaini F, Cigola E, Lagrasta C, Saccani G, Quaini E, Rossi C, Olivetti G, Anversa P End-stage cardiac failure in humans is coupled with the induction of proliferating cell nuclear antigen and nuclear mitotic division in ventricular myocytes Circ Res 75: 1050-1063, 1994
26. Cheng W, Reiss K, Kajstura J, Kowal K, Quaini F, Anversa P Downregulation of the IGF-1 system parallels the attenuation in the proliferative capacity of rat

- ventricular myocytes during postnatal development Lab Invest 72: 646-58, 1995
- 27. Kajstura J, Mansukhani M, Cheng W, Krajewski S, Reed JC, Quaini F, Sonnenblick EH, Anversa P Programmed Cell Death and expression of the protooncogene bcl-2 in myocytes during postnatal maturation of the heart Exper Cell Res 219, 110-121, 1995
  - 28. Anversa P, Kajstura J, Reiss K, Quaini F, Baldini A, Olivetti G, Sonnenblick EH Ischemic Cardiomyopathy: myocyte cell loss, myocyte cellular hypertrophy, and myocyte cellular hyperplasia Ann NY Acad Sci 752, 47-64, 1995
  - 29. Olivetti G, Quaini F, Lagrasta C, Cigola E, Ricci R, Maestri R, Anversa P Cellular basis of ventricular remodeling after myocardial infarction in rats Cardioscience 6:101-6, 1995
  - 30. Olivetti G, Quaini F, Sala R, Lagrasta C, Corradi D, Bonacina E, Gambert S, Cigola E, Anversa P Acute myocardial infarction in humans is associated with activation of programmed myocyte cell death in the surviving portion of the heart J Mol Cell Cardiol 28: 2005-2016, 1996
  - 31. Gemignani F, Marchesi G, Di Giovanni G, Salih S, Quaini F, Nobile-Orazio E Low-grade non-Hodgkin B-cell lymphoma presenting as sensory neuropathy Eur J Neurol 36:138-41, 1996
  - 32. Olivetti G, Abbi R, Quaini F, Kajstura J, Cheng W, Nitahara JA, Quaini E, Di Loreto C, Beltrami CA, Krajewsky S, Reed J, Anversa P Apoptosis in the failing human heart N Engl J Med 336: 1131-114, 1997
  - 33. Manganelli P, Quaini F, Olivetti G, Savini M, Pileri S Relapsing polychondritis with Castleman-like lymphadenopathy: a case report Clin Rheumatol 16: 480-484, 1997
  - 34. Olivetti G, Cigola E, Maestri R, Lagrasta C, Quaini F The Failing Heart Adv Clin Path 1:137-148, 1997
  - 35. Manganelli P, Quaini F, Andreoli AM, Lagrasta C, Pilato F, Zuccarelli A, Monteverdi R, D'Aversa C, Olivetti G Quantitative analysis of apoptosis and bcl-2 in Sjogren Syndrome J Rheumathol 24: 1552-59, 1997
  - 36. Frernali-Orcioni G, Falini B, Quaini F, Campo E, Piccioli M, Gamberi B, Pasquinelli G, Poggi S, Ascani S, Sabattini E, Pileri SA Beta-HCG aberrant expression in primary mediastinal large B-cell lymphoma Am J Surg Pathol 23:717-21, 1999
  - 37. Olivetti G, Cigola E, Maestri R, Corradi D, Lagrasta C, Quaini F. [Does apoptosis participate in heart failure?]. Cardiologia. 44 Suppl 1:859-61. 1999
  - 38. Fiorina P, Astorri E, Albertini R, Secchi A, Mello A, Lanfredini M, Craveri A, Olivetti G, Quaini F Soluble antiapoptotic molecules and immune activation in chronic heart failure and unstable angina pectoris J Clin Immunol 20:101-6, 2000
  - 39. Olivetti G, Cigola E, Maestri R, Lagrasta C, Corradi D, Quaini F Recent advances in cardiac hypertrophy Cardiovasc Res 45:68-75, 2000
  - 40. Manganelli P, Delsante G, Bianchi G, Fietta P, Quaini F Remitting seronegative symmetrical synovitis with pitting oedema in a patient with myelodysplastic syndrome and relapsing polychondritis Clin Rheumatol 20:132-5, 2001
  - 41. Orlic D, Kajstura J, Chimenti S, Limana F, Jakoniuk I, Quaini F, Nadal-Ginard B, Bodine DM, Leri A, Anversa P Mobilized bone marrow cells repair

- the infarcted heart, improving function and survival Proc Natl Acad Sci USA 98: 10344-349, 2001
- 42. Leri A, Quaini F, Kajstura J, Anversa P Myocyte death and myocyte regeneration in the failing human heart Ital Heart J 2:12S-14S, 2001
  - 43. Quaini F, Urbanek K, Beltrami AP, Finato N, Beltrami CA, Nadal-Ginard B, Kajstura J, Leri A, Anversa P Chimerism of the transplanted human heart N Engl J Med 346:15-22, 2002
  - 44. Limana F, Urbanek K, Chimenti S, Quaini F, Leri A, Kajstura J, Nadal-Ginard B, Izumo S, Anversa P bcl-2 overexpression promotes myocyte proliferation Proc Natl Acad Sci USA 99: 6257-62, 2002
  - 45. Urbanek K, Quaini F, Tasca G, Torella D, Castaldo C, Nadal-Ginard B, Leri A, Kajstura J, Quaini E, Anversa P Intense myocyte formation from cardiac stem cells in human cardiac hypertrophy Proc Natl Acad Sci USA 100:10440-5, 2003
  - 46. Manganelli P, Fietta P, Martella EM, Quaini F. Clinical and histological coexistence of inflammatory pseudotumour of the lymph nodes and rheumatoid arthritis. Clin Rheumatol. 22:467-71, 2003
  - 47. Quaini F, Urbanek K, Graiani G, Lagrasta C, Maestri R, Monica M, Boni A, Ferraro F, Delsignore R, Tasca G, Leri A, Kajstura J, Quaini E, Anversa P The regenerative potential of the human heart Int J Cardiol 95: 26-8, 2004
  - 48. Kajstura J, Rota M, Whang B, Cascapera S, Hosoda T, Bearzi C, Nurzynska D, Kasahara H, Zias E, Bonafè M, Nadal-Ginard B, Torella D, Nascimbene A, Quaini F, Urbanek K, Leri A, Anversa P Bone marrow cells differentiate in cardiac lineages after infarction independently of cell fusion Circ Res 96:127-37, 2005
  - 49. Urbanek K, Torella D, Sheikh F, De Angelis A, Nurzynska D, Silvestri F, Beltrami CA, Bussani R, Beltrami AP, Quaini F, Bolli R, Leri A, Kajstura J, Anversa P: Myocardial Regeneration by Activation of Multipotent Cardiac Stem Cells in Ischemic Heart Failure Proc Natl Acad Sci USA 102: 8692-97, 2005
  - 50. Linke A, Muller P, Nurzynska D, Casarsa C, Torella D, Nascimbene A, Castaldo C, Cascapera S, Bohm M, Quaini F, Urbanek K, Leri A, Hintze T, Kajstura J, Anversa P: Cardiac stem cells in the dog heart regenerate infarcted myocardium improving cardiac performance Proc Natl Acad Sci USA 102: 8966-71, 2005
  - 51. Graiani G, Lagrasta C, Migliaccio E, Spillmann F, Meloni F, Madeddu P, Quaini F, Padura IM, Lanfrancone L, Pelicci PG, Emanueli C Genetic deletion of the p66Shc adaptor protein protects from Angiotensin II-induced myocardial damage Hypertension 46: 1-8, 2005
  - 52. Urbanek K, Rota M, Cascapera S, Bearzi C, Nascimbene A, De Angelis A, Hosoda T, Chimenti S, Baker M, Limana F, Nurzynska D, Torella D, Rotatori F, Rastaldo R, Musso E, Quaini F, Leri A, Kajstura J, Anversa P Cardiac stem cells possess growth factor-receptor systems that after activation regenerate the infarcted myocardium, improving ventricular function and long-term survival Circ Res 97: 663-673, 2005
  - 53. Spillmann F, Graiani G, Van Linthout S, Meloni M, Campesi I, Lagrasta C, Westermann D, Tschope C, Quaini F, Emanueli C, Madeddu P Regional and global protective effects of tissue kallikrein gene delivery to the peri-infarct myocardium Regenerative Medicine; 1, 2: 235-254, 2006

54. Bearzi C, Rota M, Hosoda T, Tillmanns J, Nascimbene A, De Angelis A, Yasuzawa-Amano S, Trofimova I, Siggins RW, Lecapitaine N, Cascapera S, Beltrami AP, D'Alessandro DA, Zias E, Quaini F, Urbanek K, Michler RE, Bolli R, Kajstura J, Leri A, Anversa P. Human cardiac stem cells. *Proc Natl Acad Sci U S A* 28;104:14068-7, 2007
55. Stilli D, Lagrasta C, Berni R, Bocchi L, Savi M, Delucchi F, Graiani G, Monica M, Maestri R, Baruffi S, Rossi S, Macchi E, Musso E, Quaini F. Preservation of ventricular performance at early stages of diabetic cardiomyopathy involves changes in myocyte size, number and intercellular coupling. *Basic Res Cardiol* 102: 488-499, 2007
56. Mastorci F, Vicentini M, Viltart O, Manghi M, Graiani G, Quaini F, Meerlo P, Nalivaiko E, Maccari S, Sgoifo A. Long-term effects of prenatal stress: Changes in adult cardiovascular regulation and sensitivity to stress. *Neurosci Biobehav Rev* 33 (2):191-203, 2009
57. Fietta P, Delsante G, Quaini F. Hematologic manifestations of connective autoimmune diseases. *Clin Exp Rheumatol*. 27:140-54, 2009
58. Oikawa A, Siragusa M, Quaini F, Mangialardi G, Katare RG, Caporali A, van Buul JD, van Alphen FP, Graiani G, Spinetti G, Kraenkel N, Prezioso L, Emanueli C, Madeddu P. Diabetes Mellitus Induces Bone Marrow Microangiopathy. *Arterioscler Thromb Vasc Biol* 30:498-508, 2010
59. Prezioso L, Tanzi S, Galaverna F, Frati C, Testa B, Savi M, Graiani G, Lagrasta C, Cavalli S, Galati S, Madeddu D, Lodi Rizzini E, Ferraro F, Musso E, Stilli D, Urbanek K, Piegari E, De Angelis A, Maseri A, Rossi F, Quaini E, Quaini F. Cancer Treatment-Induced Cardiotoxicity: a Cardiac Stem Cell Disease? *Cardiovasc Hematol Agents Med Chem*. 8:55-75, 2010
60. Meloni M, Caporali A, Graiani G, Lagrasta C, Katare R, Van Linthout S, Spillmann F, Campesi I, Madeddu P, Quaini F, Emanueli C. Nerve growth factor promotes cardiac repair following myocardial infarction. *Circ Res*. 106:1275-84, 2010
61. Colussi C, Berni R, Rosati J, Straino S, Vitale S, Spallotta F, Baruffi S, Bocchi L, Delucchi F, Rossi S, Savi M, Rotili D, Quaini F, Macchi E, Stilli D, Musso E, Mai A, Gaetano C, Capogrossi MC. The histone deacetylase inhibitor suberoylanilide hydroxamic acid reduces cardiac arrhythmias in dystrophic mice. *Cardiovasc Res*. 87: 73-82, 2010
62. Kajstura J, Gurusamy N, Ogórek B, Goichberg P, Clavo-Rondon C, Hosoda T, D'Amario D, Bardelli S, Beltrami AP, Cesselli D, Bussani R, del Monte F, Quaini F, Rota M, Beltrami CA, Buchholz BA, Leri A, Anversa P. Myocyte turnover in the aging human heart. *Circ Res*. 107:1374-86, 2010
63. Rossini A, Frati C, Lagrasta C, Graiani G, Scopece A, Cavalli S, Musso E, Baccarin M, Di Segni M, Fagnoni F, Germani A, Quaini E, Mayr M, Xu Q, Barbuti A, Difrancesco D, Pompilio G, Quaini F, Gaetano C, Capogrossi MC. Human Cardiac and Bone Marrow Stromal Cells exhibit distinctive properties related to their origin. *Cardiovasc Res*. 89:650-60, 2011
64. Mormile R, De Michele M, Squarcia U, Quaini F. Hypertrophic cardiomyopathy in neonates of diabetic mothers: indirect evidence for a model of apoptotic reversibility by survivin? *Int J Cardiol*. 146:244-5, 2011
65. Van Linthout S, Spillmann F, Graiani G, Miteva K, Peng J, Van Craeyveld E, Meloni M, Tolle M, Escher F, Subasiguller A, Doehner W, Quaini F, De Geest B, Schultheiss HP, Tschoepe C. Down-regulation of endothelial TLR4 signalling after apo A-I gene transfer contributes to improved survival in an

- experimental model of lipopolysaccharide-induced inflammation. *J Mol Med.* 89:151-60, 2011
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  - 67. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Is telomerase the final downstream effector of the escape of cardiomyocytes from the point-of-no-return of apoptosis in infants of diabetic mothers? *Int J Cardiol.* 2011 151:378-80
  - 68. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Surviving acute myocardial infarction (IMA): a match ruled by insulin and mitochondria? *Int J Cardiol.* 2011 150:226
  - 69. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Postnatal regression of hypertrophic cardiomyopathy in infants of diabetic mothers: a crosstalk between Hox genes and epidermal growth factor (EGF) gene polymorphism? *Int J Cardiol.* 2011 150:340
  - 70. Kajstura J, Rota M, Hall SR, Hosoda T, D'Amario D, Sanada F, Zheng H, Ogórek B, Rondon-Clavo C, Ferreira-Martins J, Matsuda A, Arranto C, Goichberg P, Giordano G, Haley KJ, Bardelli S, Rayatzadeh H, Liu X, Quaini F, Liao R, Leri A, Perrella MA, Loscalzo J, Anversa P. Evidence for human lung stem cells. *N Engl J Med.* 2011 364:1795-806
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  - 73. Frati C, Savi M, Graiani G, Lagrasta C, Cavalli S, Prezioso L, Rossetti P, Mangiaracina C, Ferraro F, Madeddu D, Musso E, Stilli D, Rossini A, Falco A, De Angelis AD, Rossi F, Urbanek K, Leri A, Kajstura J, Anversa P, Quaini E, Quaini F. Resident cardiac stem cells. *Curr Pharm Des.* 2011;17(30):3252-7.
  - 74. Trombini M, Hulshof HJ, Graiani G, Carnevali L, Meerlo P, Quaini F, Sgoifo A. Early maternal separation has mild effects on cardiac autonomic balance and heart structure in adult male rats. *Stress.* 2011 Nov 15. [Epub ahead of print]
  - 75. Mormile R, Vittori G, De Michele M, Squarcia U, Quaini F. Is a deceptive role of IGF-1 in Sirt1-PARP1 interactions the primary step of postnatal regression of hypertrophic cardiomyopathy in infants of diabetic mothers? *Int J Cardiol.* 2012 Jan 12;154(1):87-8. Epub 2011 Nov 7.
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- hematopoietic stem cell mobilization by altering niche function. *Sci Transl Med.* 2011 Oct 12;3(104):104ra101.
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  - 81. Bianchi F, Caffarri E, Cavalli S, Lagrasta C, Musci M, Quaini F, Savi M. Development and validation of an high performance liquid chromatography-tandem mass spectrometry method for the determination of imatinib in rat tissues. *J Pharm Biomed Anal.* 2012 Jun 1. [Epub ahead of print]
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Parma, Maj 2016

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